

Linear Regression Instructions (Excel & Google Sheets)

A linear regression will model the relationship between pressure and height measurements with a linear equation. The simplest way to do this is to **create a pressure vs. height plot in Excel or Google sheets and then fit a linear trendline.**

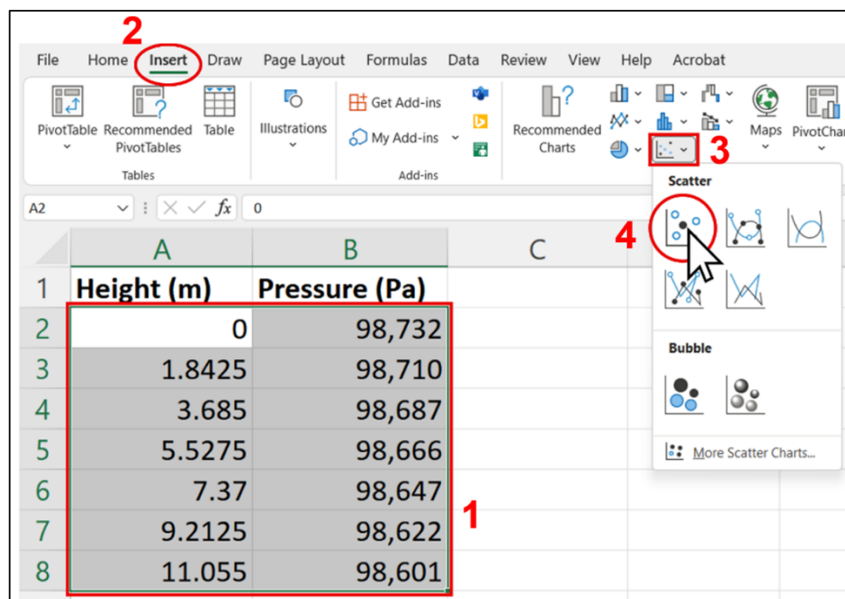
Note: The Google Sheets iOS app does not allow you to add trendlines. If you want to use Google Sheets on an iPad, you will need to open the spreadsheet in a browser like Safari.

Excel desktop app

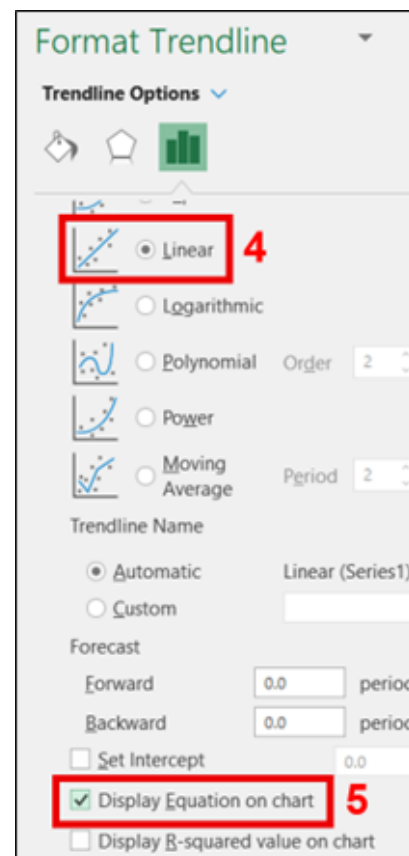
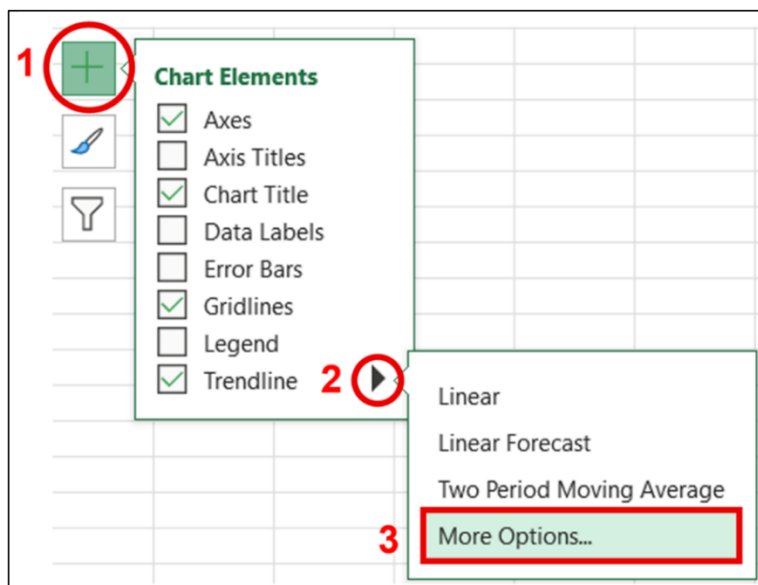
1. Create a scatter plot: Type your height and pressure measurements into a spreadsheet, then highlight the area containing your data (1). Click the “Insert” tab at the top of the screen (2), then click this symbol  in the “Charts” section (3). Select the first option: plain scatter plot with no lines (4).

Important: Make sure that...

- Pressure measurements are in Pa units, plotted on y-axis.
- Height measurements are in meters, plotted on the x-axis.



2. Add a linear trendline: Click on the plot to select it, then click the “+” symbol (1) in the top right corner of the plot to open the “Chart Elements” menu. Click the arrow next to “Trendline” (2) and select “More Options” (3). Make sure “Linear” is selected (4) and click “Display Equation on chart” (5) near the bottom of the menu. This shows the slope-intercept equation of your trendline on the plot, and you should record this on your lab handout.

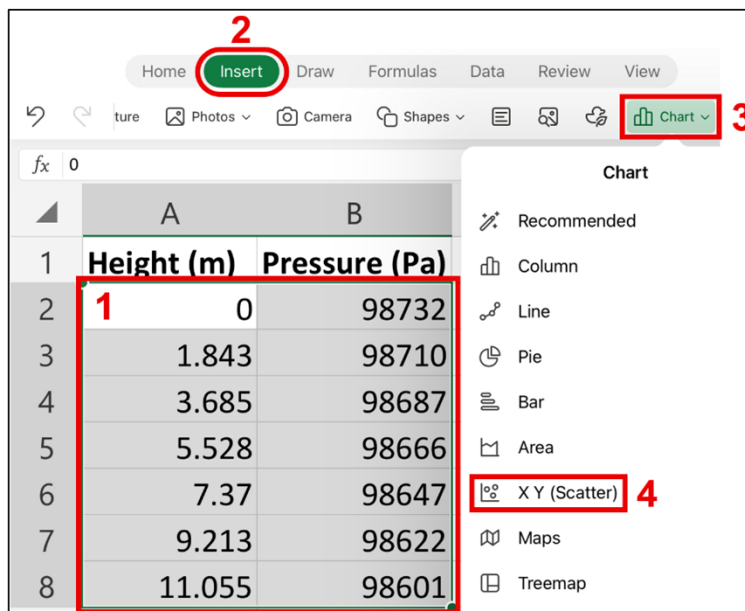


Excel iOS app

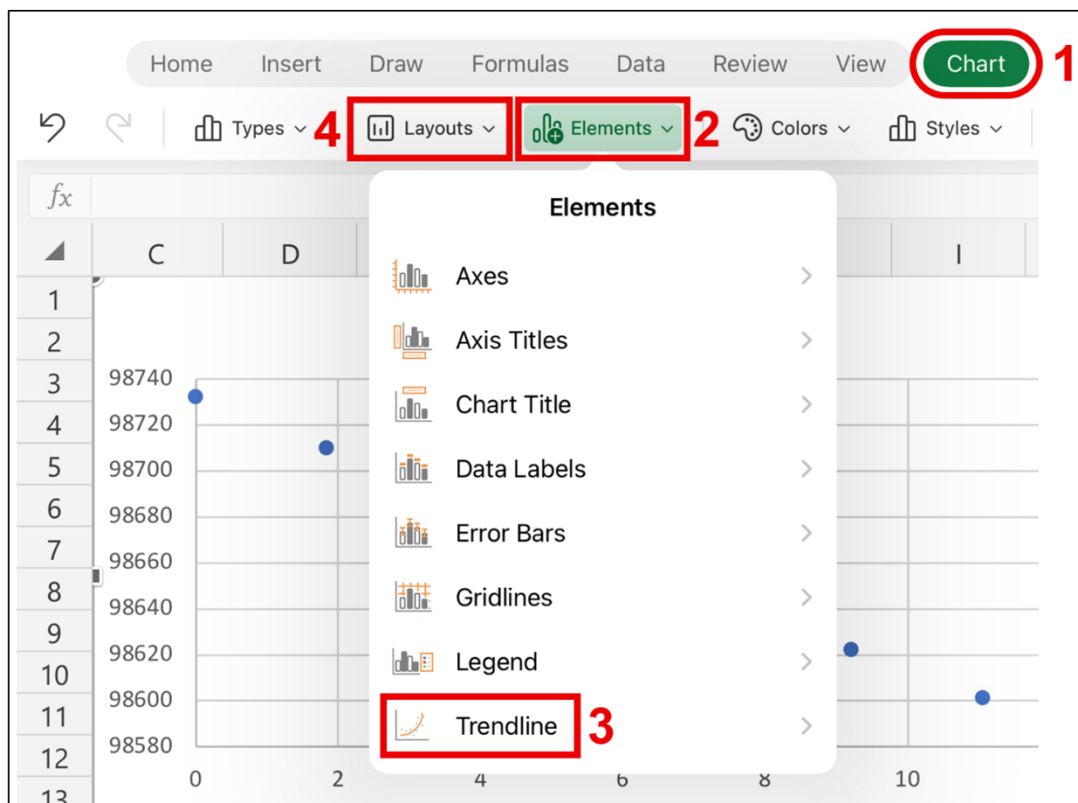
1. Create a scatter plot: Type your height and pressure measurements into a spreadsheet, then highlight the area containing your data (1). Click the “Insert” tab at the top of the screen (2), then scroll to the right to find the “Chart” section (3). Click “X Y (Scatter)” (4) and select the first option: plain scatter plot with no lines.

Important: Make sure that...

- Pressure measurements are in Pa units, plotted on y-axis.
- Height measurements are in meters, plotted on the x-axis.



2. Add a linear trendline: Click on the plot to select it. The “Chart” tab (1) should be automatically selected (if not, click it). Then click the “Elements” icon (2) and click “Trendline” at the bottom (3). Select “Linear”. To show the trendline equation on the plot, click on the “Layouts” icon (4). Then scroll through the layouts to find an option that displays the equation on the plot. Record this equation on your lab handout.



Google Sheets

1. Create a scatter plot: Type your height and pressure measurements into a spreadsheet, then highlight the area containing your data (1). Click the “Insert” tab at the top of the screen (2), then click “Chart” (3). The “Chart editor” menu should appear on the right side of the screen. You can also access this menu by clicking the symbol with three dots (⋮) in the top right corner of the plot and clicking “Edit chart”. In this menu, make sure “Scatter chart” is selected as the type (4).

Important: Make sure that...

- Pressure measurements are in Pa units, plotted on y-axis.
- Height measurements are in meters, plotted on the x-axis.

The screenshot shows the Google Sheets interface. The 'Insert' menu is open, and 'Chart' is selected. A data range of A2:B8 is highlighted. The 'Chart editor' panel on the right shows 'Scatter chart' selected as the chart type.

Height (m)	Pressure (Pa)
0	98,732
1.8425	98,710
3.685	98,687
5.5275	98,666
7.37	98,647
9.2125	98,622
11.055	98,601

2. Add a linear trendline: In the “Chart editor” menu, click “Customize” at the top (1), then “Series” (2). At the bottom of the “Series” section, check “Trendline” (3). Make sure “Linear” is selected as the type (4). Then select “Use Equation” (5) for the label. This shows the slope-intercept equation of your trendline on the plot, and you should record this on your lab handout.

The screenshot shows the 'Chart editor' panel with the 'Customize' tab selected. The 'Series' section is expanded, and 'Trendline' is checked. 'Linear' is selected as the trendline type, and 'Use Equation' is selected for the label.